

NORTH PACIFIC OCEAN, NOVEMBER 1938

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Atmospheric pressure.—Pressure over practically all parts of the North Pacific Ocean averaged higher in November 1938 than in the preceding month. At Kodiak the pressure was three-tenths of an inch higher than in October. In November the central area of the Aleutian Low lay over the eastern Aleutians and the southeastern part of Bering Sea, with the lowest average pressure, 29.52 inches, at St. Paul. The lowest recorded barometer reading of the month was 28.20 inches, at Kanaba Island, central Aleutians, on the 26th. Centers of high pressure lay off the California coast and in lower midocean near Midway Island.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, November 1938, at selected stations

Station	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Point Barrow.....	29.80	-0.19	30.42	8	29.12	15
Dutch Harbor.....	29.87	-0.02	30.16	18	28.52	27
St. Paul.....	29.52	-0.07	30.20	7	28.64	14, 24
Kodiak.....	29.62	+0.06	30.44	20	28.92	15
Juneau.....	29.85	+0.09	30.65	25	28.98	15
Tatoosh Island.....	30.11	+0.14	30.59	22	29.43	1
San Francisco.....	30.14	+0.05	30.37	7	29.86	28
Mazatlan.....	29.90	+0.01	30.02	29, 30	29.80	1, 5
Honolulu.....	29.99	-0.03	30.16	29	29.84	4
Midway Island.....	30.12	+0.04	30.30	29	29.94	10
Guam.....	29.84	-0.02	29.92	11, 12, 13	29.74	9, 18
Manila.....	29.83	0.00	29.92	12, 17	29.71	4
Hong Kong.....	30.05	+0.01	30.22	13	29.84	6, 7
Naha.....	30.09	+0.11	30.21	17	29.86	6
Titijima.....	30.01	+0.03	30.15	14, 22, 30	29.80	24
Petrovavlosk.....	29.71	-----	30.39	8	29.35	26

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Extratropical cyclones and gales.—Despite the nearer approach to the winter season, storminess on the North Pacific in November was less severe and widespread than in the preceding month, and during the first week only one gale in excess of force 8 was reported by an observing ship. That was a wind of force 10 encountered by the British S. S. *Empress of Asia* in a cyclone east of the Kuril Islands on the 6th. Aside from this cyclone, the only other of importance during the first week was one that lay northeast of Midway Island during the first 4 days and caused force-8 gales on the 1st to 3d.

A chart of the month's extratropical gales thus far reported shows that practically all of them occurred between the meridians of 150° E. and 150° W., the exceptions being fresh gales in the following localities: On the 5th in a high pressure area off the coast of central California; on the 16th off the coast of British Columbia in a depression lying over the extreme northeastern part of the ocean; and on the 22d, near 31° N., 141° W., in connection with the month's long-continued low pressure trough lying about midway along the routes between California and the Hawaiian Islands.

Between the 6th and the 14th only one gale of force as high as 10 was reported from extratropical waters. This occurred on the 10th and was encountered by the Japanese M. S. *Kaijo Maru* near 34° N., 164° E., with barometer 29.23, in the midst of a low pressure system of great extent.

On the 14th and 15th a cyclone overspread high latitudes, with pressures below 29 inches extending over the Gulf of Alaska, the eastern part of the Bering Sea, and the region of the central Aleutians. Among the few ships

to report gales in connection with the great disturbance was the eastbound British S. S. *Toorak*. During the 14th this ship encountered winds of force 9-10 for several hours. Her lowest barometer was 28.76 on the same date near 49½° N., 178½° E. It was the *Toorak* that, singularly enough, encountered the next following gale reported in high latitudes, a wind of force 9, near 48½° N., 161½° W., on the 16th.

On the 18th a tongue of high pressure extended northward over the eastern Aleutians and the Peninsula of Alaska. Pressure fell sharply to the west and southwest of Dutch Harbor, and along the steep gradient thus formed, the winds became of locally high intensity, the American S. S. *China Arrow* experiencing a south-southeast gale of force 11, barometer 29.35, late on the 18th, near 51° N., 172° W.

From the 23d to the end of the month the entire Aleutian region was covered by a deep cyclone, with central pressures for the most part below 29 inches, and with a minimum depth on the 26th of 28.20 inches. Despite the low barometer the accompanying gales for the most part were not severe and occurred, according to ships' reports, at a great distance south of the center. On the 23d to 26th vessels in the vicinity of the 40th parallel, between about 170° E. and 170° W., reported gales, but not stronger than force 9. On the 28th, however, the Japanese S. S. *San Ramon Maru* encountered rapidly rising winds in the early afternoon in 40°30' N., 161°05' W., barometer 28.79. At 5 p. m. the gale, from the northwest, had risen to hurricane strength, the only instance of a force-12 wind thus far reported for November from middle and higher latitudes of the North Pacific. The final gales reported for the month were of force 8 to 9, occurring in the same locality during the early morning of the 29th.

Cyclones and gales of the Tropics.—On November 3 a shallow depression appeared over the southern Philippines, moving westward. On the 4th, in the eastern part of the China Sea, it moved northwesterly and on the 6th to 8th lay in the vicinity of Hainan Island, where it was of considerable depth and caused gales which are shown on our charts to have attained force 8 to 9. Thereafter the storm appears to have dissipated.

On the 6th and 8th fresh east to northeast gales, accompanied by barometer readings of about 29.60 inches, occurred in the eastern part of the China Sea, associated with a depression west of the Philippines.

On the 13th a small Low, with no apparent antecedent or subsequent history, appeared in Philippine waters. In connection with this disturbance, the Japanese M. S. *Kitei Maru* reported a north gale of force 9, in 14°30' N., 124°50' E. On the same day the Dutch S. S. *Bengkalis* encountered a northeast gale of force 9, lowest barometer 29.84, close to the west coast of northern Luzon. A strong northeast monsoon current was blowing at the time along the east China coast and as far southward as northern Philippine waters.

A report on the typhoons and depressions of the Far East for the current month is expected from the Weather Bureau at Manila.

Tehuantepecers.—Northerly winds of this type were reported in the Gulf of Tehuantepec as follows: Of force 7 on the 10th and 27th; of force 8 on the 20th; and of force 9 on the 8th and 9th.

Fog.—Ships' reports show the occurrence of fog in east longitudes on only 1 day. In west longitudes, within the area 35° to 50° N., 135° to 175° W., fog was reported on 13 days, but in no single 5° square on more than 3 days. In coastal waters it was observed on 1 day off the Washington coast and on 6 days off the California coast.